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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/601,922 | 06/23/2003 | Yaolong Chen | 90113 | 7549 |
| 24628 | 7590 | 03/21/2006 | EXAMINER | |
| WELSH & KATZ, LTD 120 S RIVERSIDE PLAZA 22ND FLOOR CHICAGO, IL 60606 | | | VINCENT, SEAN E | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1731 | |

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

CM

| | | | |
|------------------------------|-------------------------------|-----------------------------|--|
| Office Action Summary | Application No. 10/601,922 | Applicant(s) CHEN ET AL. | |
| | Examiner Sean E. Vincent | Art Unit 1731 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 32-44 is/are rejected.
- 7) ☒ Claim(s) 16-31 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claims 1, 2, 8, 9, 12, 15, 41 and 44 are indefinite because it is not known what “spherical-cap-like” encompasses.
4. Claim 1 recites the limitation "the center point" in line 11. There is insufficient antecedent basis for this limitation in the claim. This problem affects claims 8, 14, 29 and 43 as well. Claims 14 and 29 are further indefinite because “(M)” was designated to by a “pivoting point” first and then a “center point”.
5. Claim 1 recites the limitation "the pivoting movement" in lines 11 and 12. There is insufficient antecedent basis for this limitation in the claim.
6. Claim 2 recites the limitation "the separating cut" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim. This problem affects claims 3, 9, 10, 12, 15, 30, 41 and 44.
7. Claim 20 recites the limitation "the machine" in line 3. There is insufficient antecedent basis for this limitation in the claim.

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8. Claim 39 recites the limitation "the outside" in line 4. It is unclear what constitutes an outside vs. an inside since it is unknown to what "the outside refers. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-6, 8-15, 32-37 and 40-44 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Lipkins (US 3159947). Lipkins taught methods and devices for making spherical cuts in fracturable materials such as quartz glass using a diamond-edged spherical cutter (see entire disclosure). While optical elements and lenses were not explicitly stated by Lipkins, the examiner takes official notice that a spherical surface on a quartz glass member would necessarily form a lens surface. The cutter and the material were both mounted for rotation and the cutter was swung gradually through an angle to increase its penetration into the body of the material being cut. One cutter was designed in pieces such that it was to be assembled in a partial spherical cut (col. 3). The claimed grooves or depressions read on the interfaces between parts in Lipkins. The interfaces would inherently help to transport lubricating fluid as disclosed (col. 3, lines 16-18). The claimed clearances or bores would read on the inherently present holes for receiving screws (col. 3, lines 50-55).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 7 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipkins '947.

13. Lipkins did not teach producing lenses from calcium fluoride, barium chloride, magnesium fluoride or lithium fluoride. Lipkins only mentioned fused quartz, silicon and germanium by name. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the method of Lipkins to make lenses from the claimed materials because those are frangible materials which are very similar to fused quartz, silicon and germanium and a person of skill in the art at the time the invention was made would have expected the similar materials to react similarly in a cutting method.

14. Lipkins did not teach that the cutting elements were arranged irregularly on the spherical cutter. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to arrange the cutting elements in any degree of regularity sought for the particular task being performed.

15. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lipkins '947 in view of Lipkins (US 3159952). Lipkins '947 did not teach wedge-shaped cutting elements. Lipkins '952 taught the use of wedge shaped cross-section cutting elements (see figures 5-7 and col. 3, line 71 to col. 4, line 64). It would have been obvious to a person of ordinary skill in the

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art at the time the invention was made to use a cutting element from Lipkins '952 in Lipkins '947 because Lipkins '952 taught that it would have helped produce a continuous spherical surface at the final point of breaking of the inside part from the outside part of the material.

Allowable Subject Matter

16. Claims 16-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or fairly suggest devices as claimed wherein a bell-shaped part-spherical shell was used. It would not have been obvious to modify the cutting means of Lipkins and Lipkins as such because the Lipkins apparatus was only designed to cut in a scooping motion. The prior art does not teach or fairly suggest accommodating the cut material at both ends in receptacles or under an axial tensile force. It would not have been obvious to incorporate these features because Lipkins and Lipkins did not provide for a means for rotatably mounting the scooped-out portion of the material. The prior art does not teach or fairly suggest a cutting element with vibration dampening construction. It would not have been obvious to incorporate such a feature because vibrations were not disclosed to be harmful by Lipkins and Lipkins.

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Conclusion

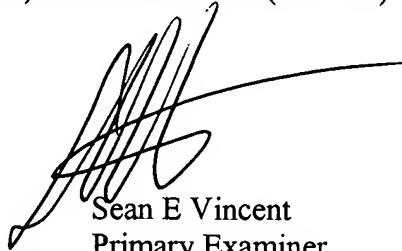
18. The prior art made of record and not relied upon is cited to further show the state of the art.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E. Vincent whose telephone number is (571) 272-1194.

The examiner can normally be reached on M - F (8:30 - 6:00).

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sean E Vincent
Primary Examiner
Art Unit 1731

S Vincent
March 17, 2006